PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of:
SAVERIO CARL FALCO ET AL.

CASE NO.: BB1037 US DIV

APPLICATION NO.: UNKNOWN

GROUP ART UNIT: UNKNOWN

FILED: CONCURRENTLY HEREWITH

EXAMINER: UNKNOWN

FOR: CHIMERIC GENES AND METHODS FOR INCREASING THE LYSINE AND THREONINE CONTENT OF THE SEEDS OF PLANTS

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

This is submitted to facilitate prosecution of the above-identified application.

In the Claims

Kindly cancel claims 2-40.

Kindly add the following new claims:

--41. A plant comprising in its genome two foreign nucleotide sequences which cause seeds obtained from said plant to accumulate lysine at a level of at least ten percent higher than do seeds of a plant which do not comprise said foreign nucleotide sequences in its genome wherein the foreign nucleotide sequences each comprise a nucleic acid fragment, said fragments being different from each other, and said fragments each being operably linked to a plant seed specific promoter and said fragments are (a) a nucleic acid fragment encoding an aspartokinase which is substantially insensitive to lysine inhibition and further wherein said fragment is operably linked to a plant chloroplast transit sequence, and (b) a nucleic acid fragment encoding a dihydrodipicolinic acid synthase which is substantially insensitive to lysine inhibition and further wherein said fragment is operably linked to a plant chloroplast transit sequence.

42. The plant of claim 41 wherein said plant is selected from the group consisting of rapeseed, soybean, and corn.

43. Progeny plants from the of claim 41 or 42 wherein said progeny plants comprise in their genome the two foreign nucleotide sequences of the plant of claim 41 or 41.

44. Seeds obtained from the plants of claims 41 or 42 wherein said seeds comprise in their genome the two foreign nucleotide sequences of the plant of claim 41 or 42.

45. Seeds obtained from the plants of claim 43 wherein said seeds comprise in their genome the two foreign nucleotide sequences of the plant of claim 43.—

Remarks

Claims 2- 40 have been cancelled, and claims 41-45 have been added. This case is a divisional application under 37 CFR §1.53(b). The present application is a divisional of Application No. 08/823,771 filed on March 24, 1997 which is a divisional of Application No. 08/474,633 filed June 7, 1995, which is a continuation-in-part of Application No. 08/178,212 filed January 6, 1994 (abandoned) which was a national filing of PCT/US93/02480 filed March 18, 1993 which is a continuation-in-part of Application No. 07/855,414 filed March 19, 1992 (abandoned).

Support for the new claims can be found in the specification and claims as originally filed. Thus, now new matter has been added.

Enclosed herewith along with this Preliminary Amendment are an Information Disclosure Statement setting forth all references which had been cited by Applicants or the Examiner in connection with the above-identified applications, a Petition and Amendment Correcting Inventorship Under 37 CFR §1.48 and a Request for Permission to Amend the Drawings Under 37 CFR §1.121(d).

Also enclosed are an Amendment and Petition to Correct Inventorship Under 37 CFR §1.48(b). This change is necessitated due to a restriction requirement in Application No. 08/823,771 filed March 24, 1997.

Please charge any fees which are required in connection with the filing of this Preliminary Amendment, Information Disclosure Statement and Petition and Amendment to Correct Inventorship Under 37 CFR §1.48(b) to Deposit Account No. 04-1928 (E. I. du Pont de Nemours and Company).

Respectfully submitted,

Lynne M. Christenbury

LYNNE M. CHRISTENBURY
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FACSIMILE: (302) 892-1026

Dated: Dec 17, 2001

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

SAVERIO C. FALCO ET AL. CASE NO.: BB-1037-US DIV

APPLN. NO.: UNKNOWN GROUP ART UNIT: UNKNOWN

FILED: UNKNOWN EXAMINER: UNKNOWN

FOR: CHIMERIC GENES AND METHODS FOR INCREASING THE LYSINE AND THREONINE CONTENT OF THE SEEDS OF PLANTS

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

Amendment Correcting Inventorship Under 37 CFR §1.48(b)

Pursuant to 37 CFR §1.48(b), please amend the above-application by deleting the names of Sharon Jo Keeler and Janet Ann Rice as co-inventors. With this Amendment, Saverio Carl Falco is the sole inventor of the subject matter now claimed.

This change in inventorship is necessitated by the cancellation of the claims as filed due to a restriction requirement.

Enclosed is a Petition identifying Sharon Jo Keeler and Janet Ann Rice as the inventors being deleted and acknowledging that their invention is no longer being claimed in this application.

Respectfully submitted,

Lynne M. Christenbury
Attorney for Applicants
Registration No. 30,971
Telephone: 302-992-5481

Date: Dec 17, 2001

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of:

SAVERIO CARL FALCO ET AL.

CASE NO.: BB-1037 US DIV

SERIAL NO.: UNKNOWN

GROUP ART UNIT: UNKNOWN

FILED: CONCURRENTLY HEREWITH

EXAMINER: UNKNOWN

FOR: NUCLEIC ACID FRAGMENTS AND METHODS FOR INCREASING THE LYSINE AND THREONINE CONTENT OF THE SEEDS OF PLANTS

REQUEST FOR PERMISSION TO AMEND THE DRAWINGS UNDER 37 CFR §1.121(d)

Hon. Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

This request to amend the drawings is consistant with the changes made in application No. 08/823771 and submitted to provide certain formal drawings and to correct certain inadvertent errors in the numbering and submission of the drawings. Support for all the amendments are in the specification or in the present drawings.

AMENDMENT

The amendments have been made are shown in red ink on the original drawings.

Figures 1, 2(A), 2(B), 3, 4(A), 4(B), 5, 6, 7(A), 7(B), 7(C), 7(D), 8(A), 8(B) are replaced with drawings bearing the same numbers.

A new figure 9 is submitted.

Present Fig. 9 and the figure numbers for 10-19, have been renumbered as follows:

Fig. 9 has become Fig. 10

Fig. 10 has become Fig. 11

Fig. 11 has become Fig. 12

Fig. 12 has become Fig 13

Fig 13A and Fig. 13B have become Fig. 14A and Fig. 14B

Fig. 14 has become Fig. 15

Fig. 15 has become Fig. 16

Fig. 16 has become Fig. 17

Fig. 17 has become Fig. 18

Fig. 18 has become Fig. 19

Fig. 19 has become Fig. 20.

Request is also made for the entry of attached Fig. 21 and Fig. 22.

REMARKS

The sequences now in Fig. 9 are an enlarged rendition of Sequences 104 and 105 in the specification. Request is made that this Figure 9 be entered in the application.

Support in the specification for adding Figures 21 and 22 is at page 10 lines 18 and 19 and at page 115, lines 1-5 for Figure 21 and page 115, lines 6-10 for Figure 22.

Should the Examiner have any questions about this amendment, he/she is urged to contact applicants' attorney at the telephone number below.

Respectfully submitted,

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REGISTRATION NO.: 30,971
TELEPHONE: 302-992-5481
FACSIMILE: 302-892-1026

Dated: Dec 17, 2001

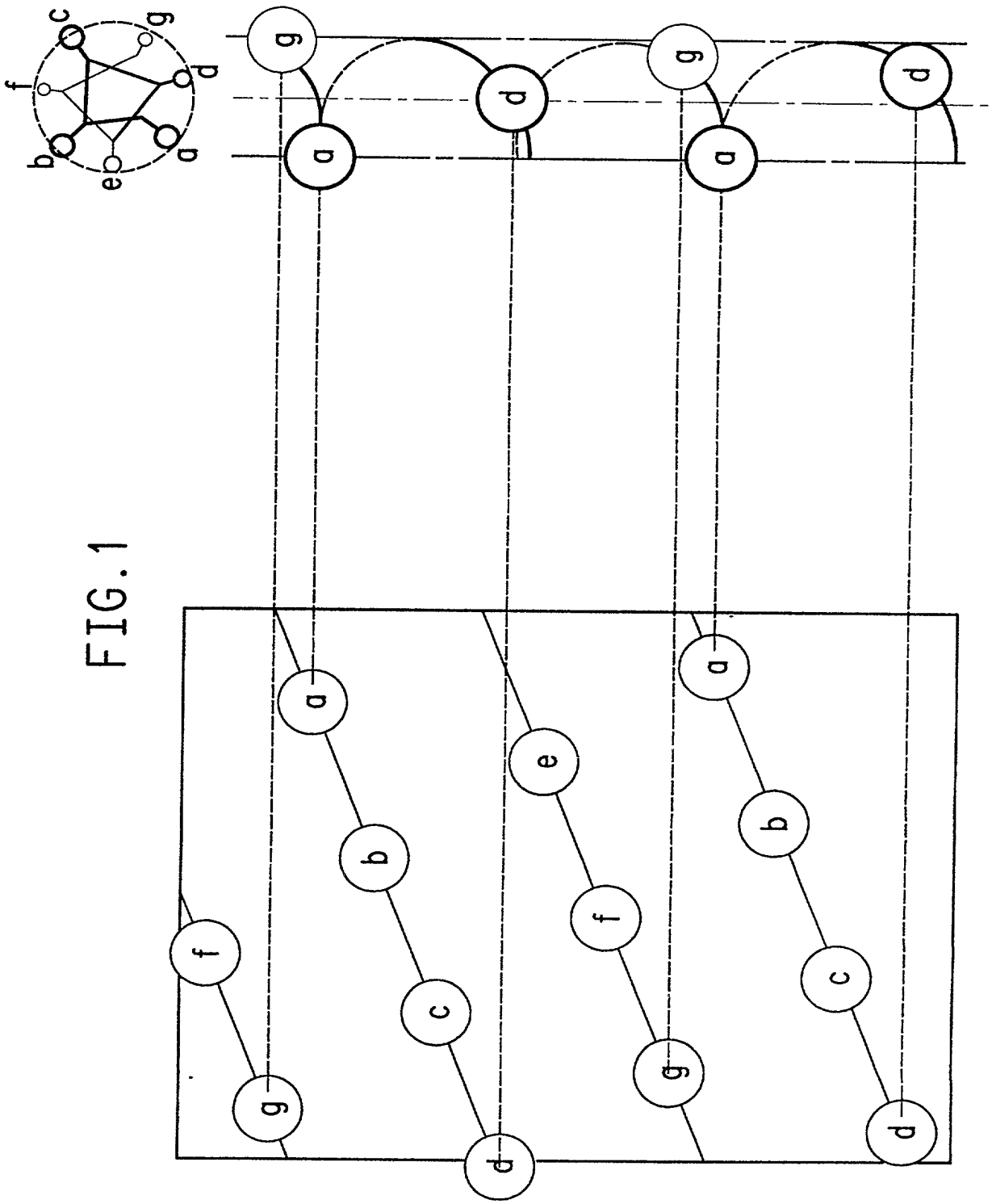


FIG. 1

FIG.2A

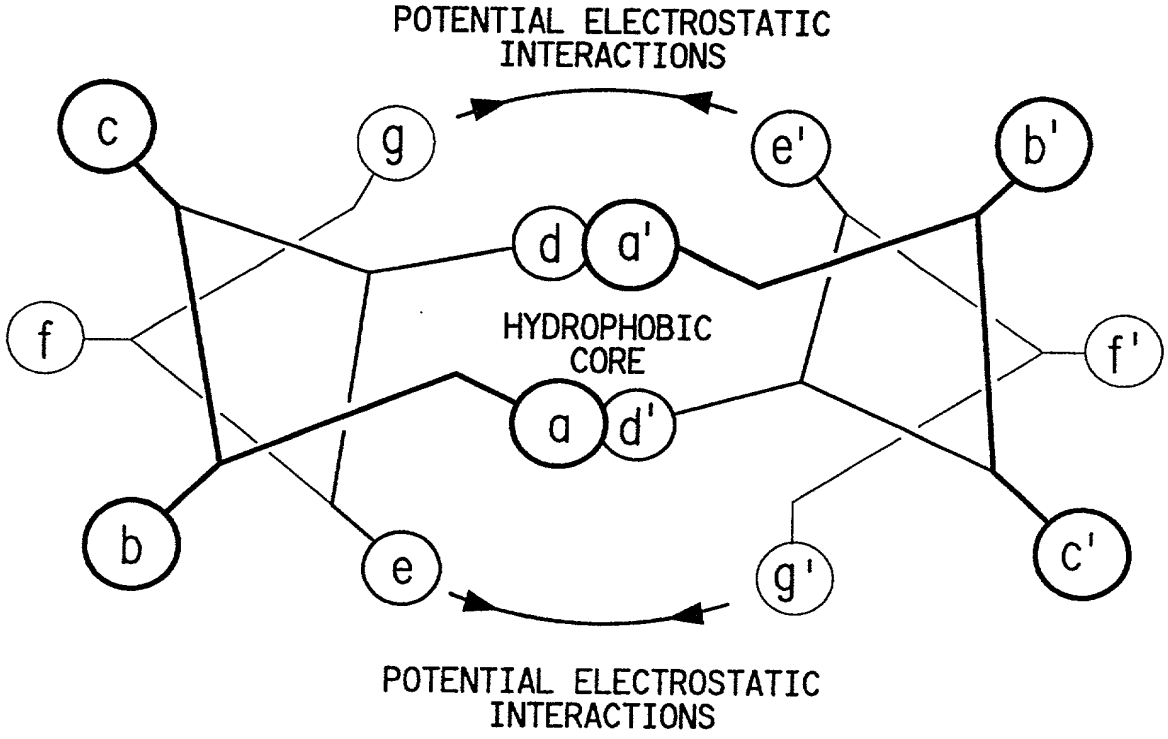


FIG.2B

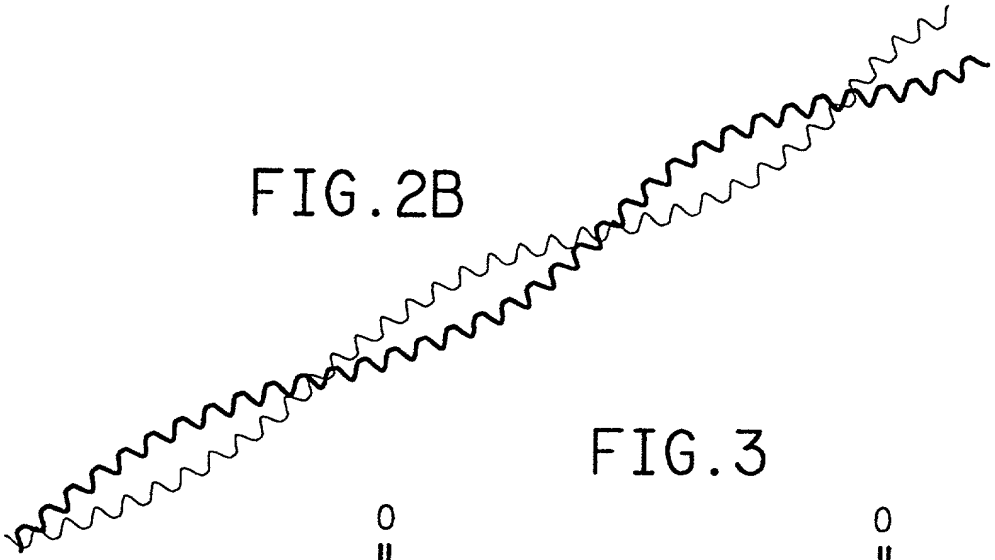
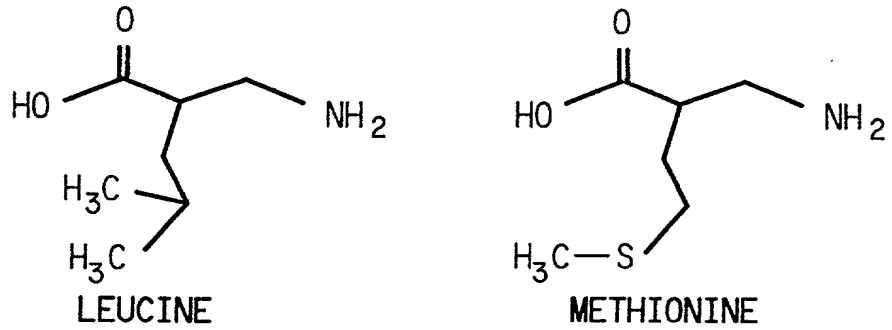
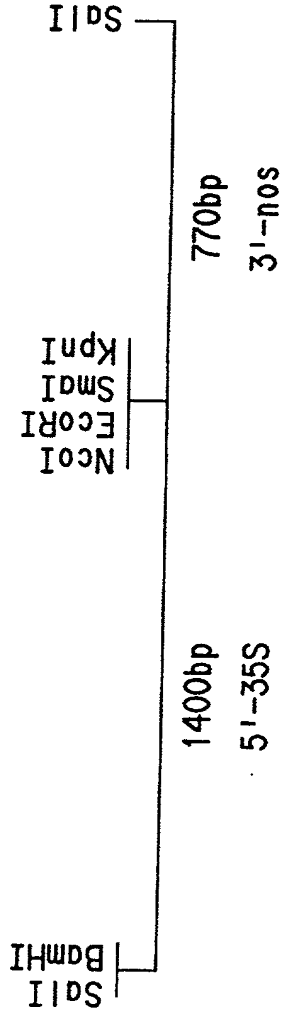


FIG.3

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KpnI
SmaI
EcoRI
NcoI
770bp
3'-nos
1400bp
5'-35S
BamHI
SalI

FIG.4a

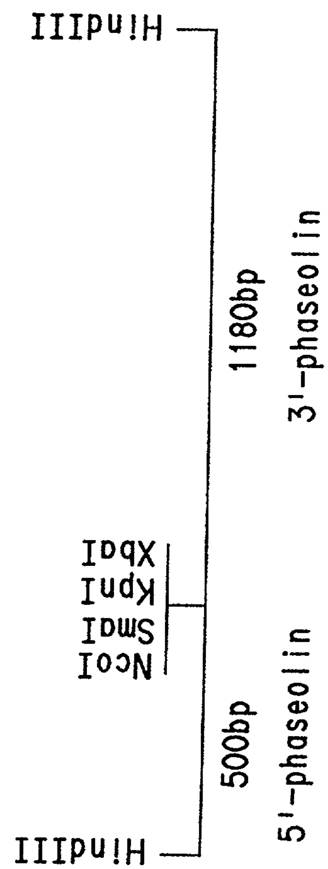
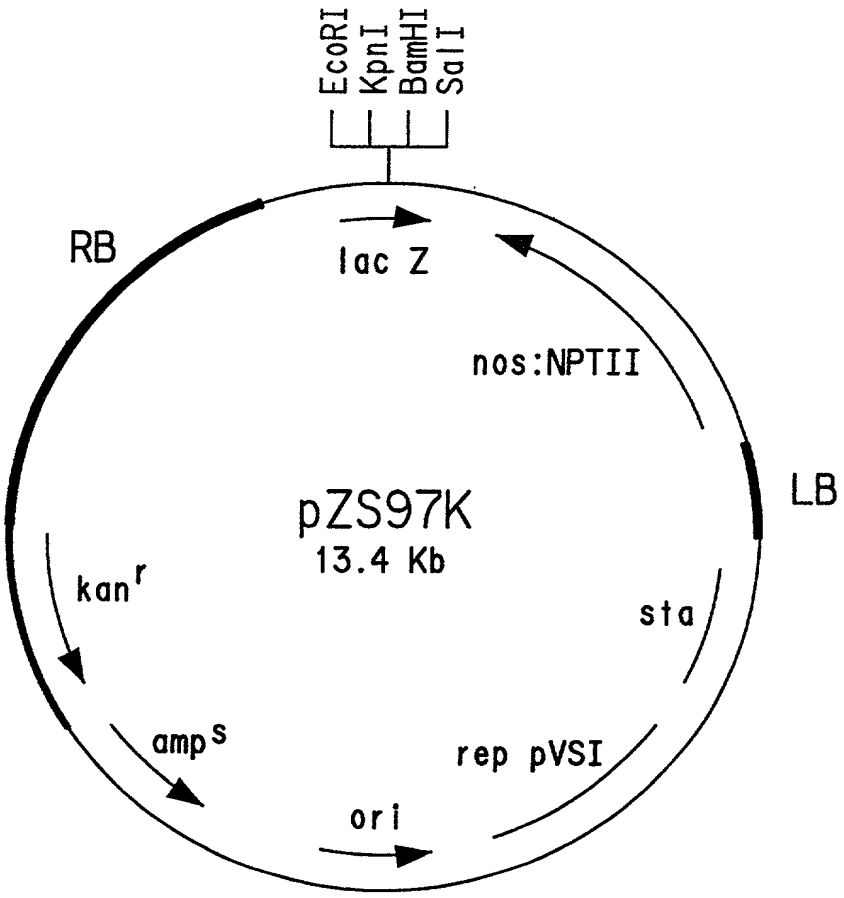

HindIII
XbaI
KpnI
SmaI
NcoI
1180bp
3'-phaseolin
500bp
5'-phaseolin
HindIII

FIG.4b

FIG.5



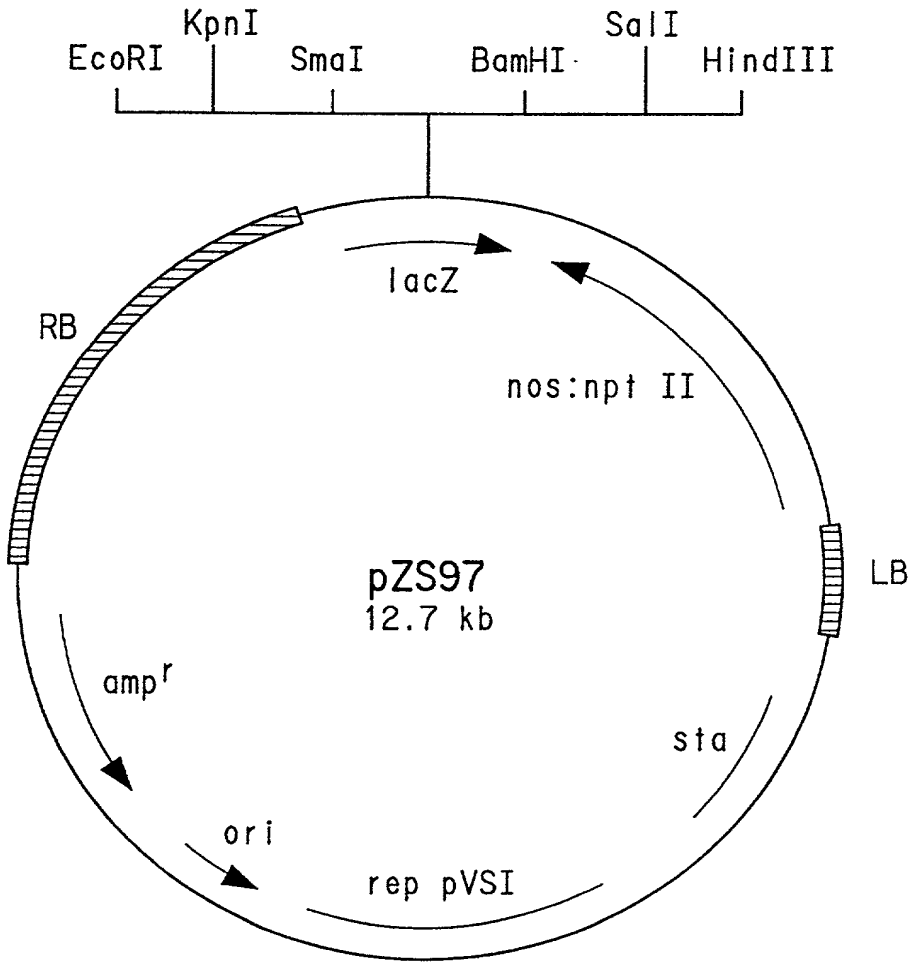


FIG.6

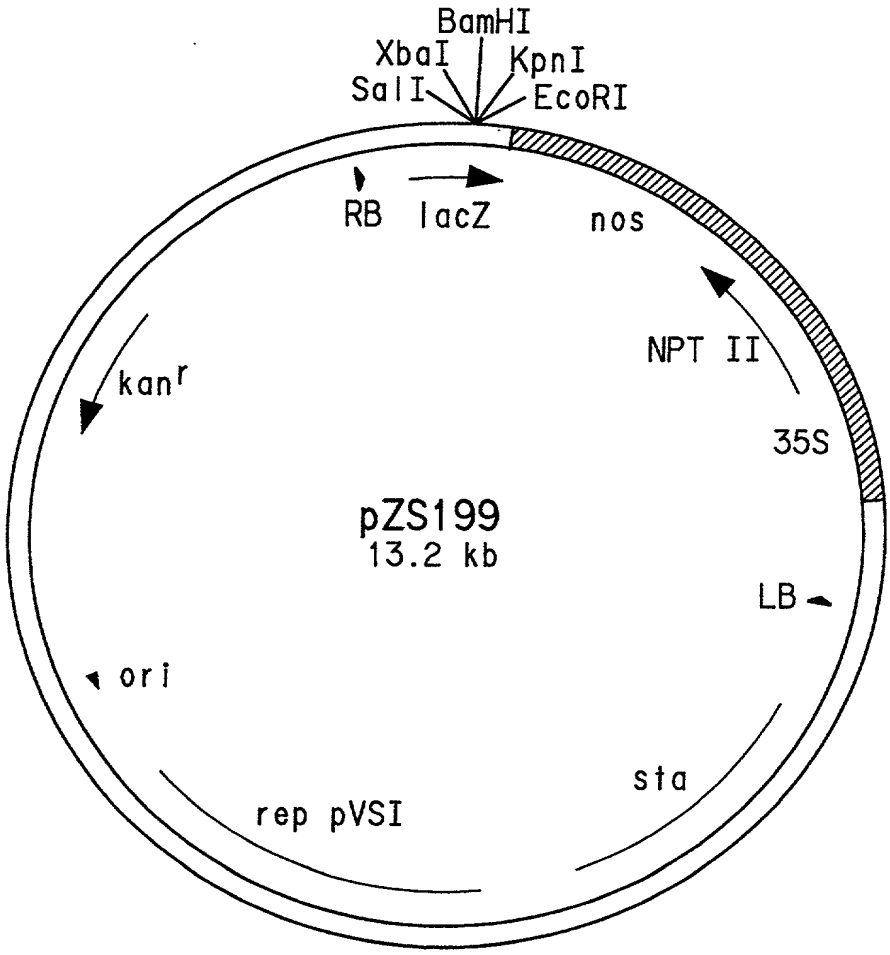


FIG.7A

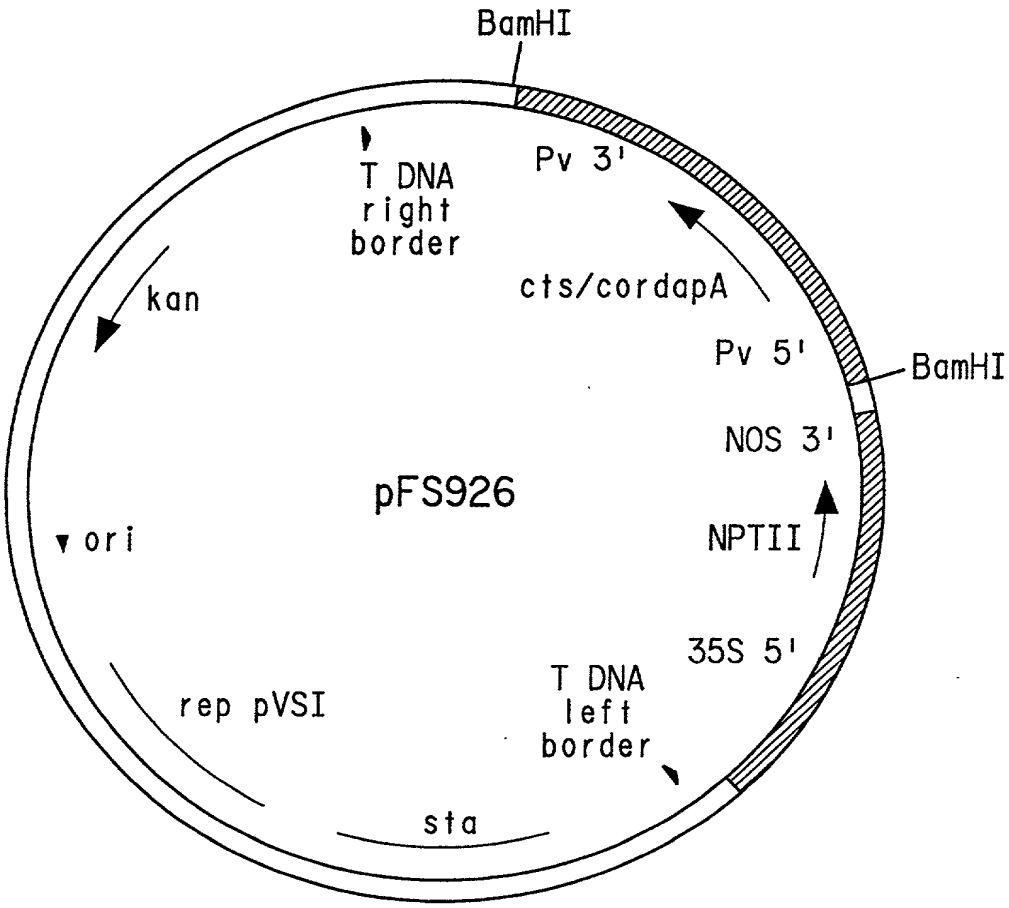

BamHI
T DNA
right
border
Pv 3'
cts/cordapA
kan
Pv 5'
BamHI
NOS 3'
pFS926
NPTII
ori
35S 5'
T DNA
left
border
rep pVSI
sta

FIG. 7B

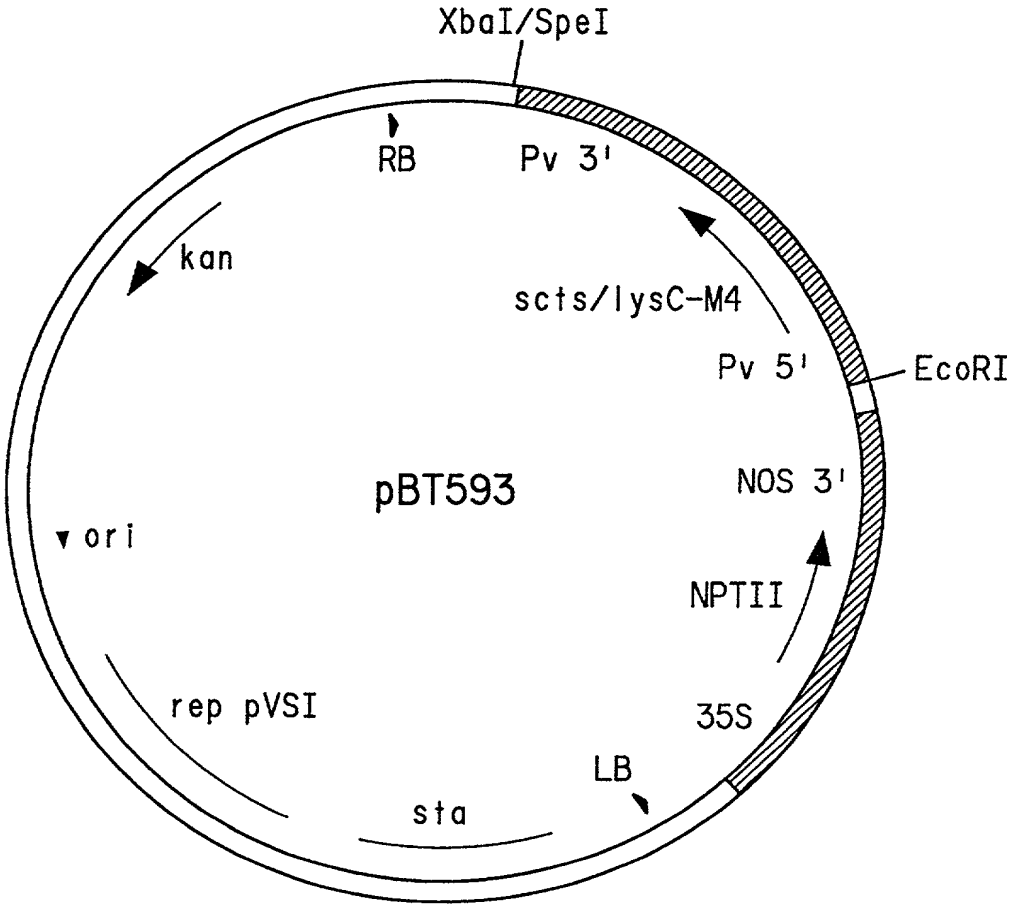


FIG.7C

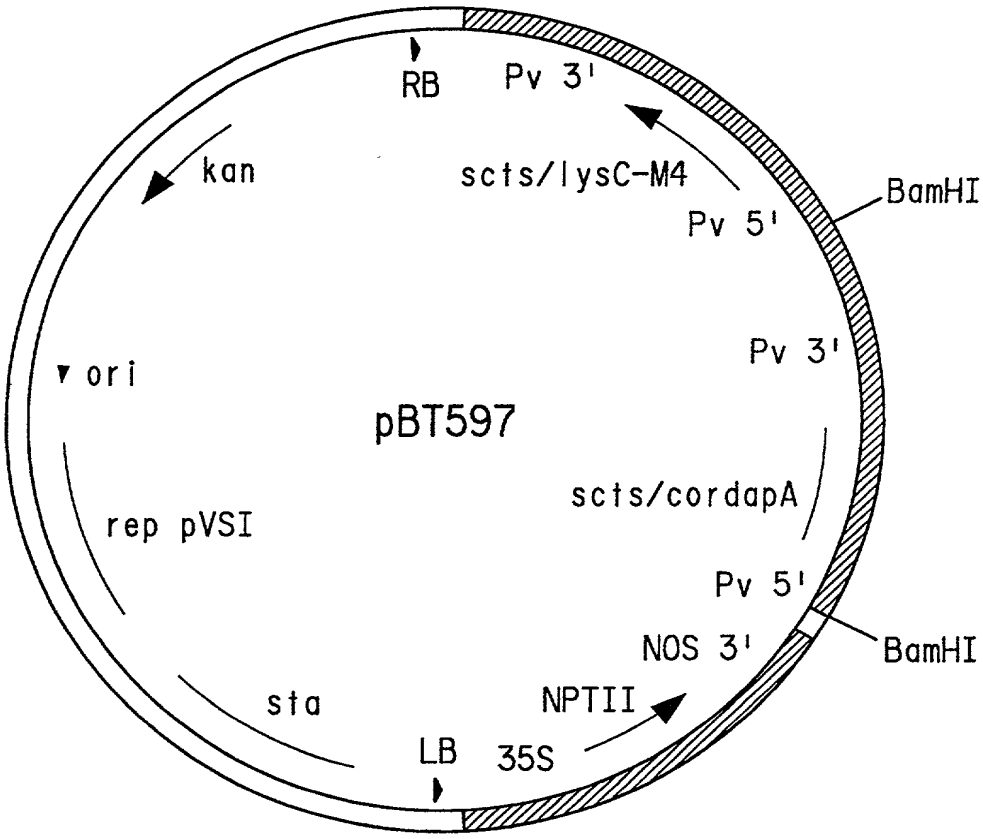

RB
Pv 3'
kan
scts/lysC-M4
BamHI
Pv 5'
Pv 3'
ori
pBT597
scts/cordapA
rep pVSI
Pv 5'
NOS 3'
BamHI
sta
NPTII
LB
35S

FIG. 7D

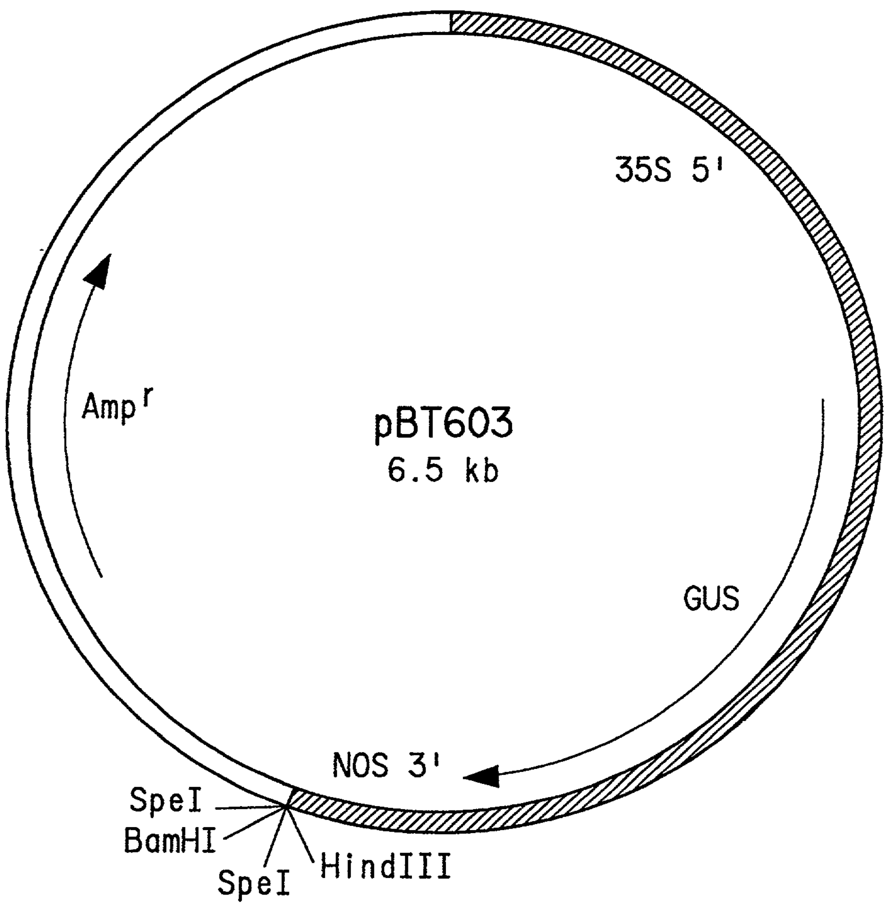


FIG.8A

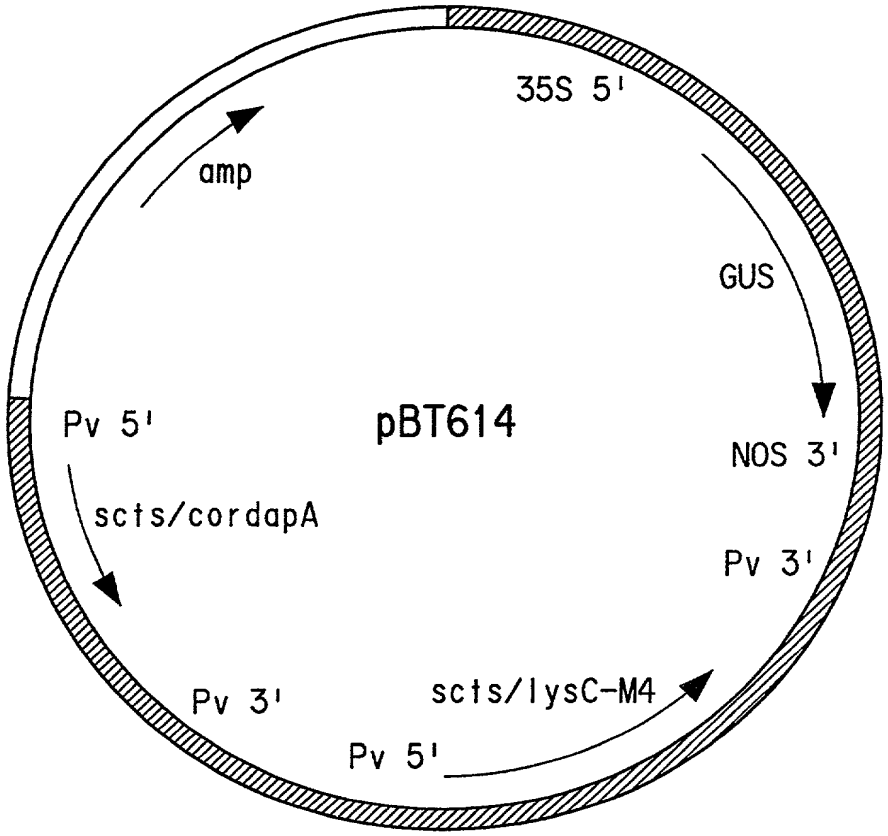

35S 5'
amp
GUS
Pv 5'
pBT614
NOS 3'
scts/cordapA
Pv 3'
Pv 3'
scts/lysC-M4
Pv 5'

FIG.8B

FIG.9

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SEQ ID NO:104          19 KKSGVLILGAGRVXRPAADFLASVRTISSQQWYKTYFGADSEEKTDVHVI 68
                          . ..||:||.| | .|. | ||.                    ..|::|.
S. cerevisiae SDH       1 MGKNVLLLGSGFVAQPVIDTLAA.....................NDDINVT 30

                         69 VASLYLKDAKETVEGISDVEAVRLDVSDSESLLKYVSQVDVVLSLLPASC 118
                            ||:  | :| :.:.  |: .|:.|||.|...| | :.: |||:||:| .
                         31 VACRTLANA.QALAKPSGSKAISLDVTDDSALDKVLADNDVVISLIPYTF 79

                        119 HA 120
                            |:
                         80 HP 81

SEQ ID NO:105            1 KHTATLLEFGDIKNGQTTTAMAKTVGIPAAIGALLLIEDKIKTRGVLRPL 50
                          .:|.||:::|.:   .. ..|| |||.|.||:. :::::.||..|:| |.
S. cerevisiae SDH      374 TRTSTLVDYGKV...GGYSSMAATVGYPVAIATKFVLDGTIKGPGLLAPY 420

                         51 EAEVYLPALDIL.QAYGIKLMEKAE  74
                            .:|:  | :. | : ||| |.||.
                        421 SPEINDPIMKELKDKYGIYLKEKTVA 446
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Fig. 10

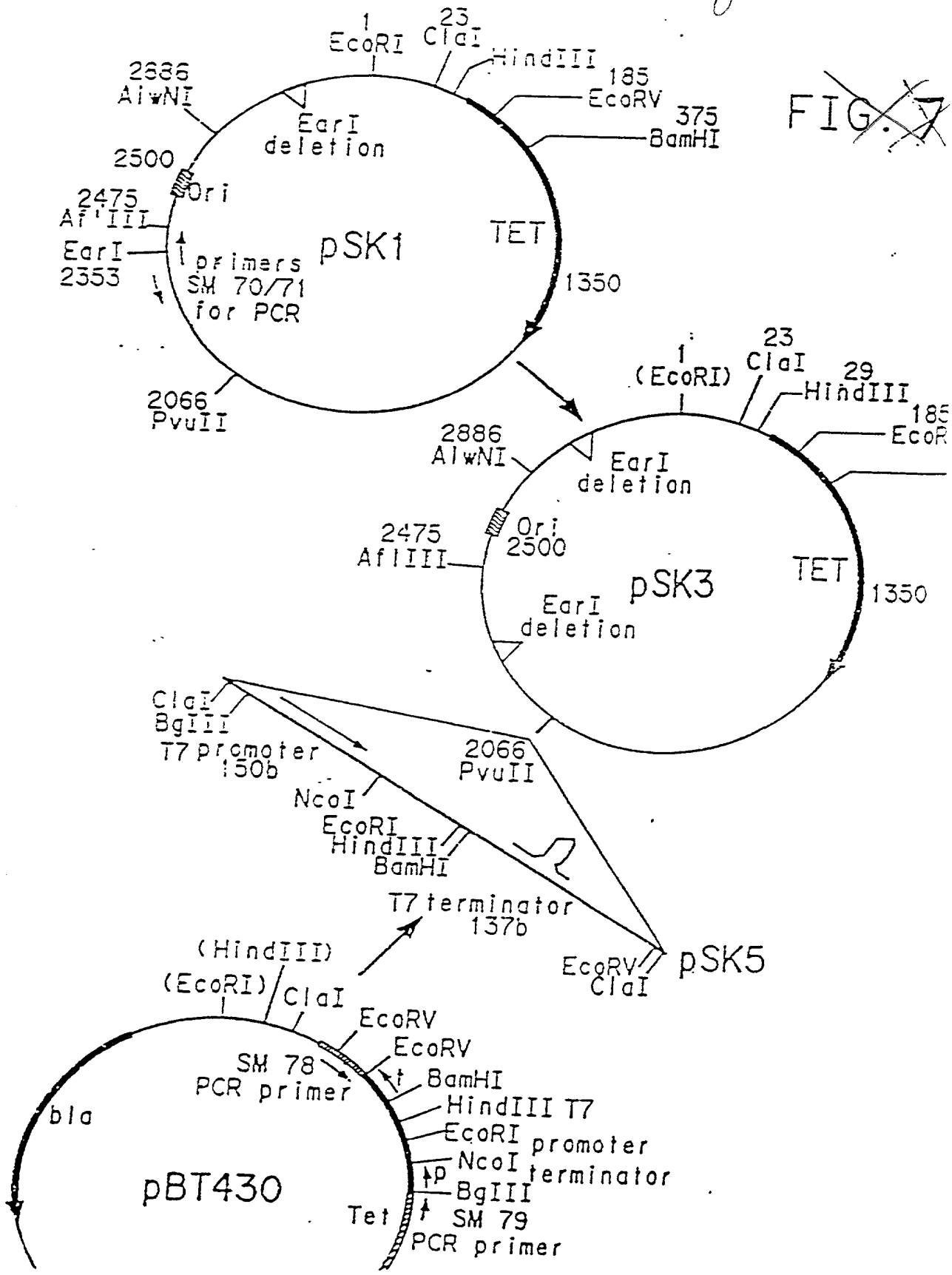

FIG. 7

FIG. 11

FIG. 8

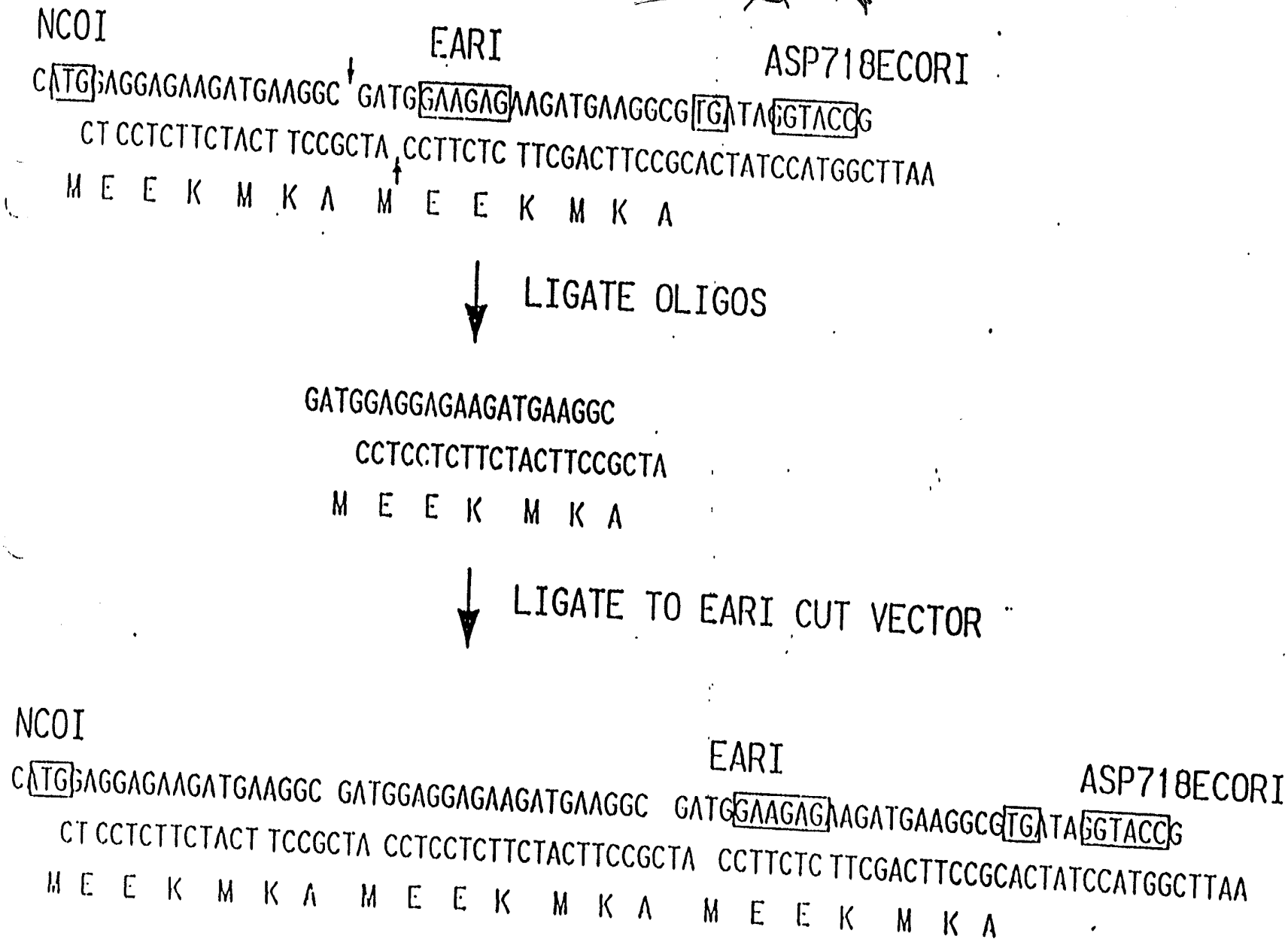
NCOI
EARI
ASP718ECORI
CATGGAGGAGAAGATGAAGGC GATGGAAGAGAAGATGAAGGCGTGATAGGTACCG
CT CCTCTTCTACT TCCGCTA CCTTCTC TTCGACTTCCGCACTATCCATGGCTTAA
M E E K M K A M E E K M K A
LIGATE OLIGOS
GATGGAGGAGAAGATGAAGGC
CCTCCTCTTCTACTTCCGCTA
M E E K M K A
LIGATE TO EARI CUT VECTOR
NCOI
EARI
ASP718ECORI
CATGGAGGAGAAGATGAAGGC GATGGAGGAGAAGATGAAGGC GATGGAAGAGAAGATGAAGGCGTGATAGGTACCG
CT CCTCTTCTACT TCCGCTA CCTCCTCTTCTACTTCCGCTA CCTTCTC TTCGACTTCCGCACTATCCATGGCTTAA
M E E K M K A M E E K M K A M E E K M K A

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FIG. 12

FIG. 11

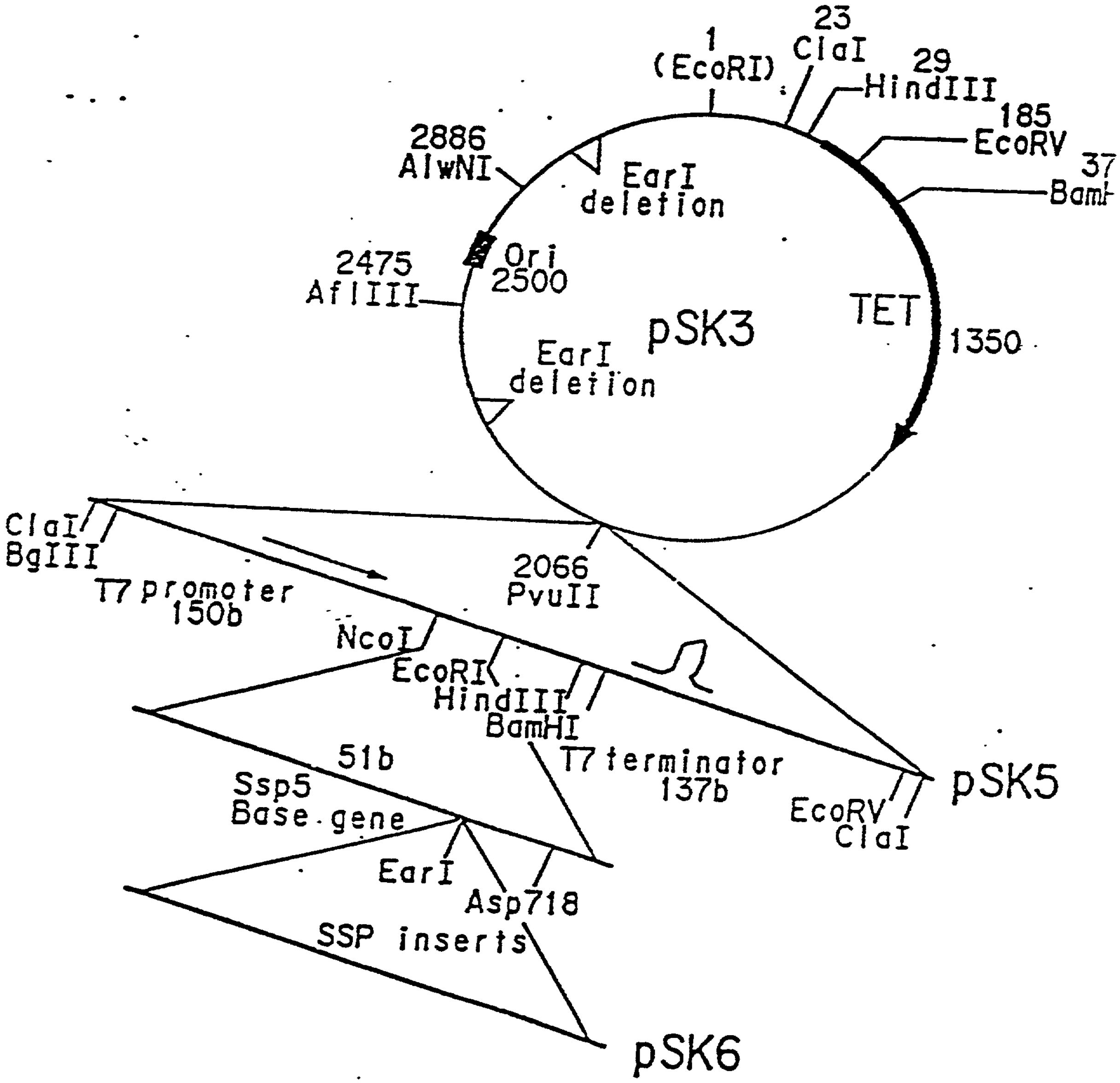

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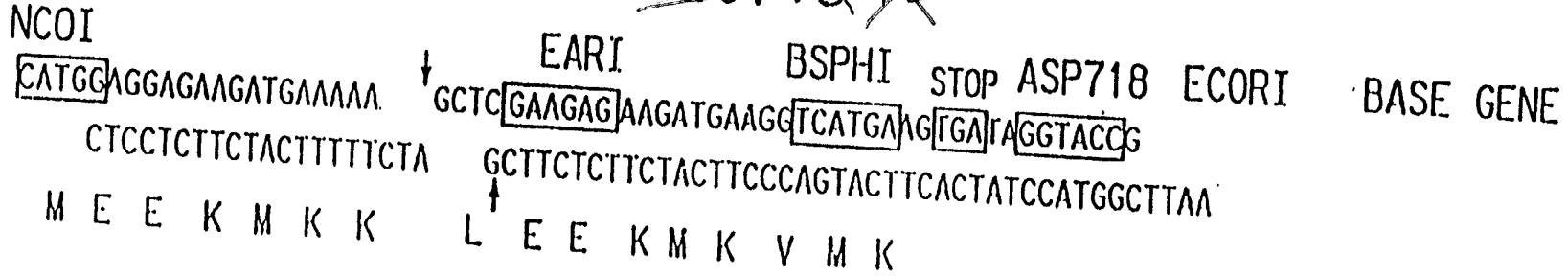
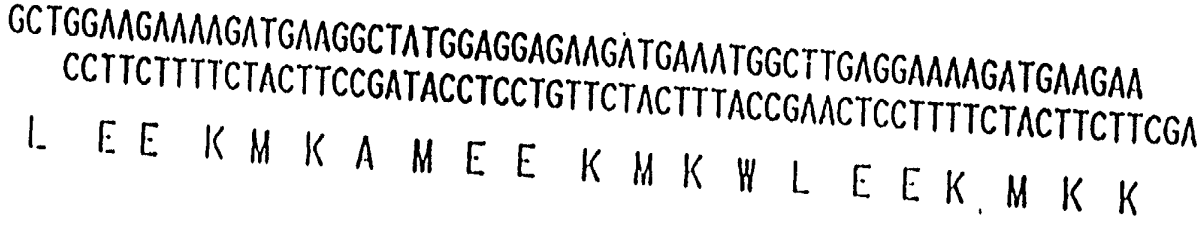
FIG. 13

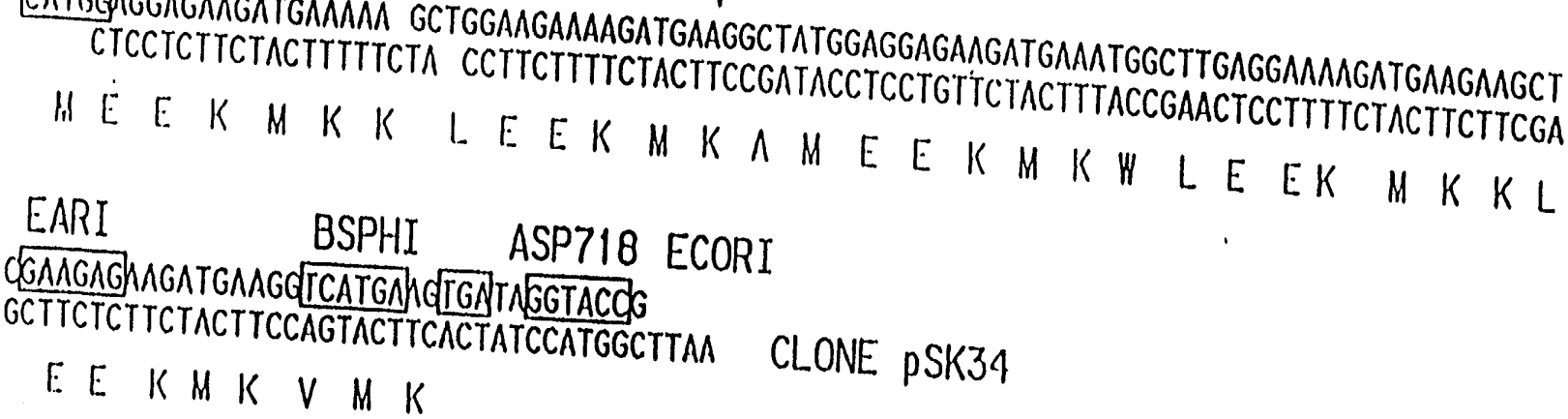
~~FIG. 10~~



OLIGONUCLEOTIDE INSERTS



OLIGOS LIGATED INTO EARI CUT BASE GENE



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~~14/14~~

FIG. 14A

FIG. ~~14A~~ 13A

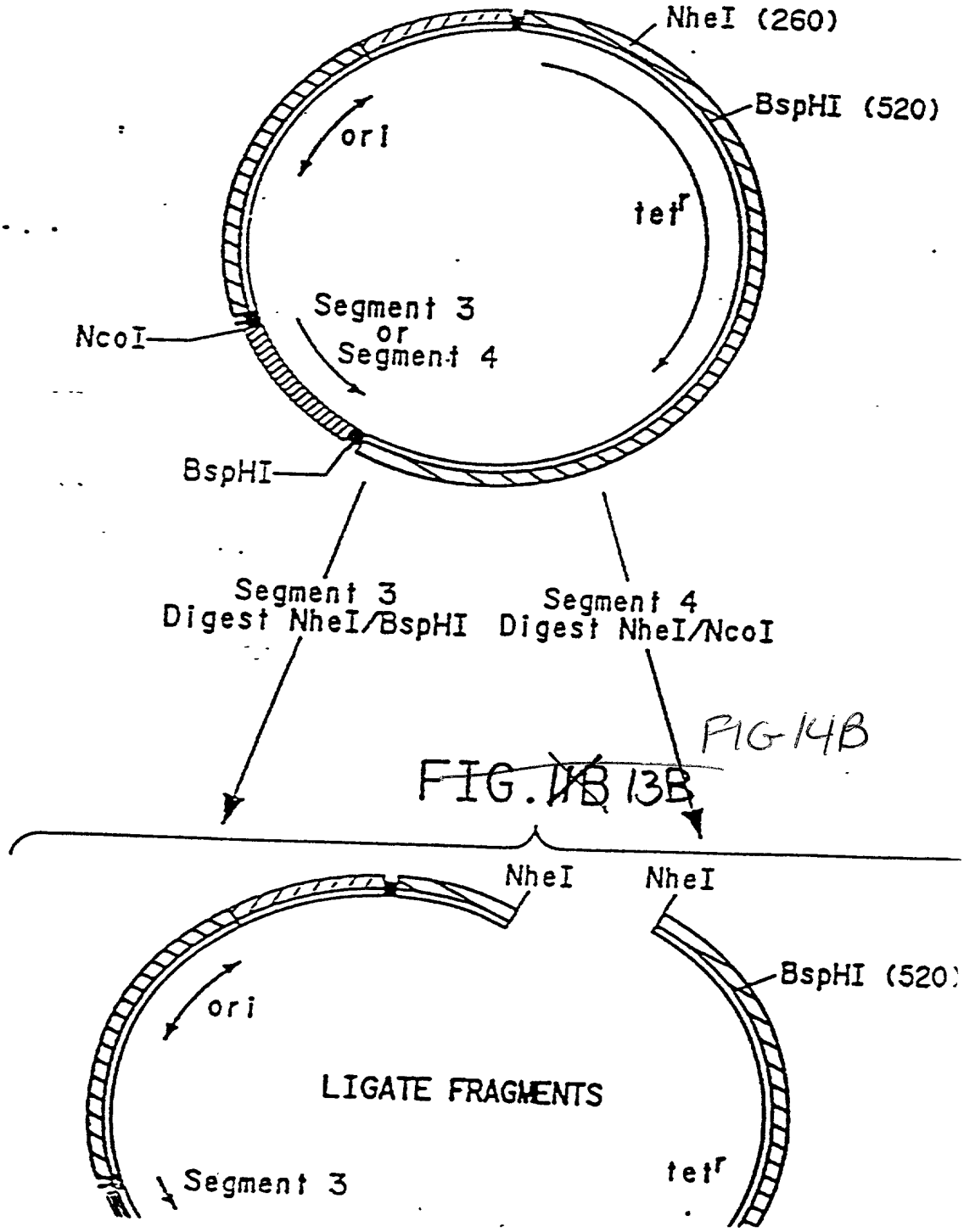
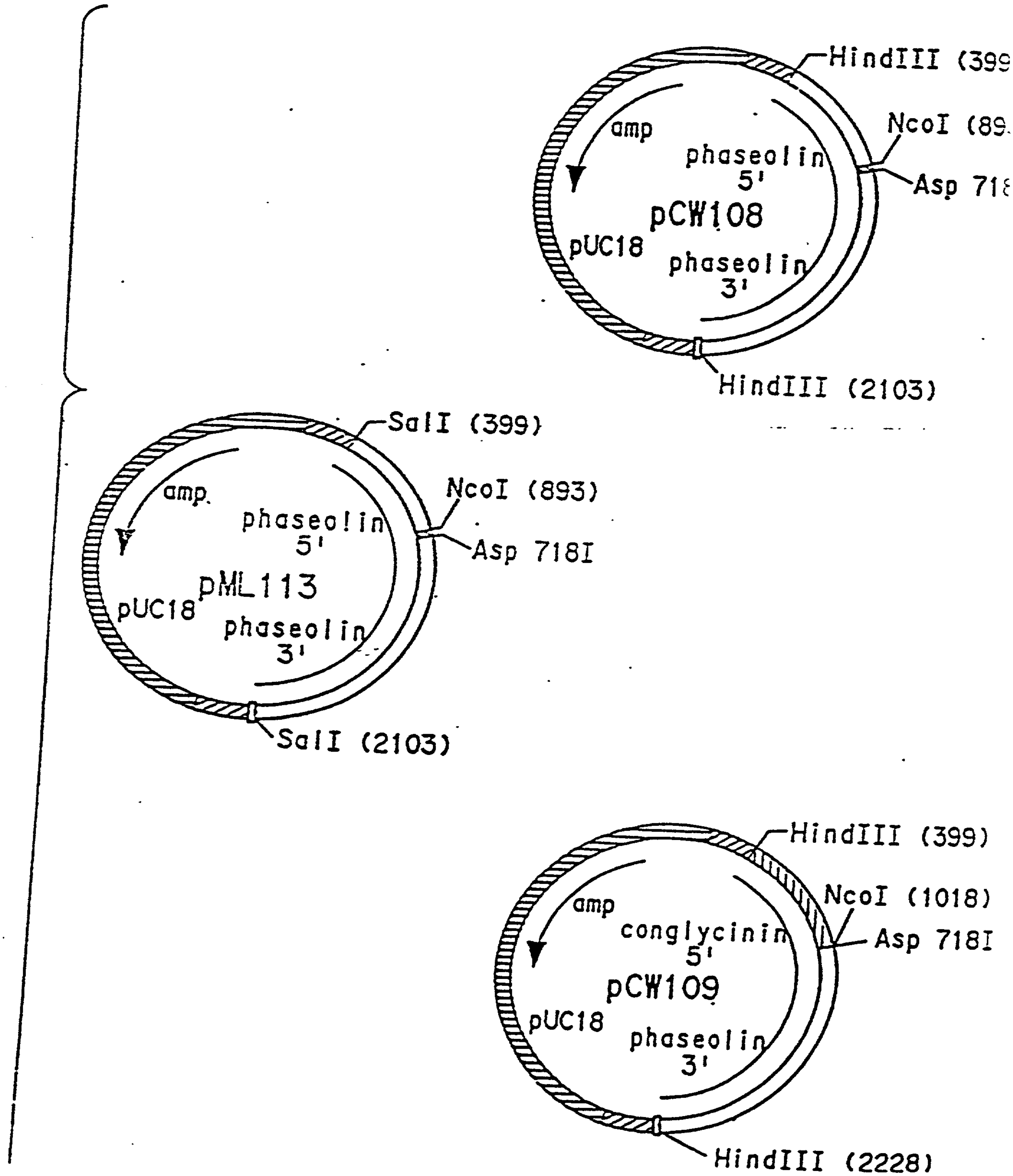


FIG 14B

FIG. ~~14B~~ 13B

FIG 15

FIG. ~~12~~ 14



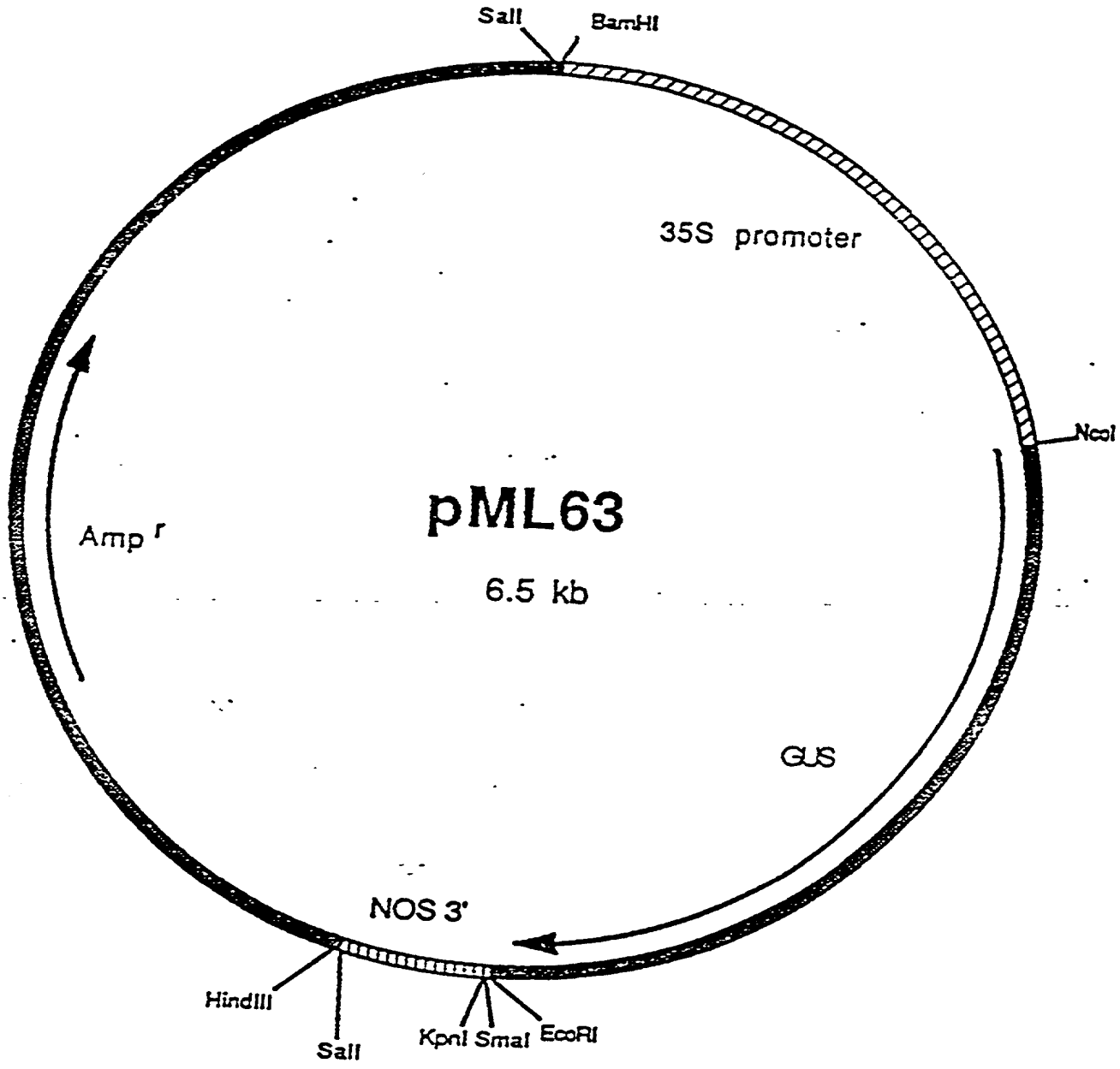


FIG. ~~14~~ 15 FIG. 16

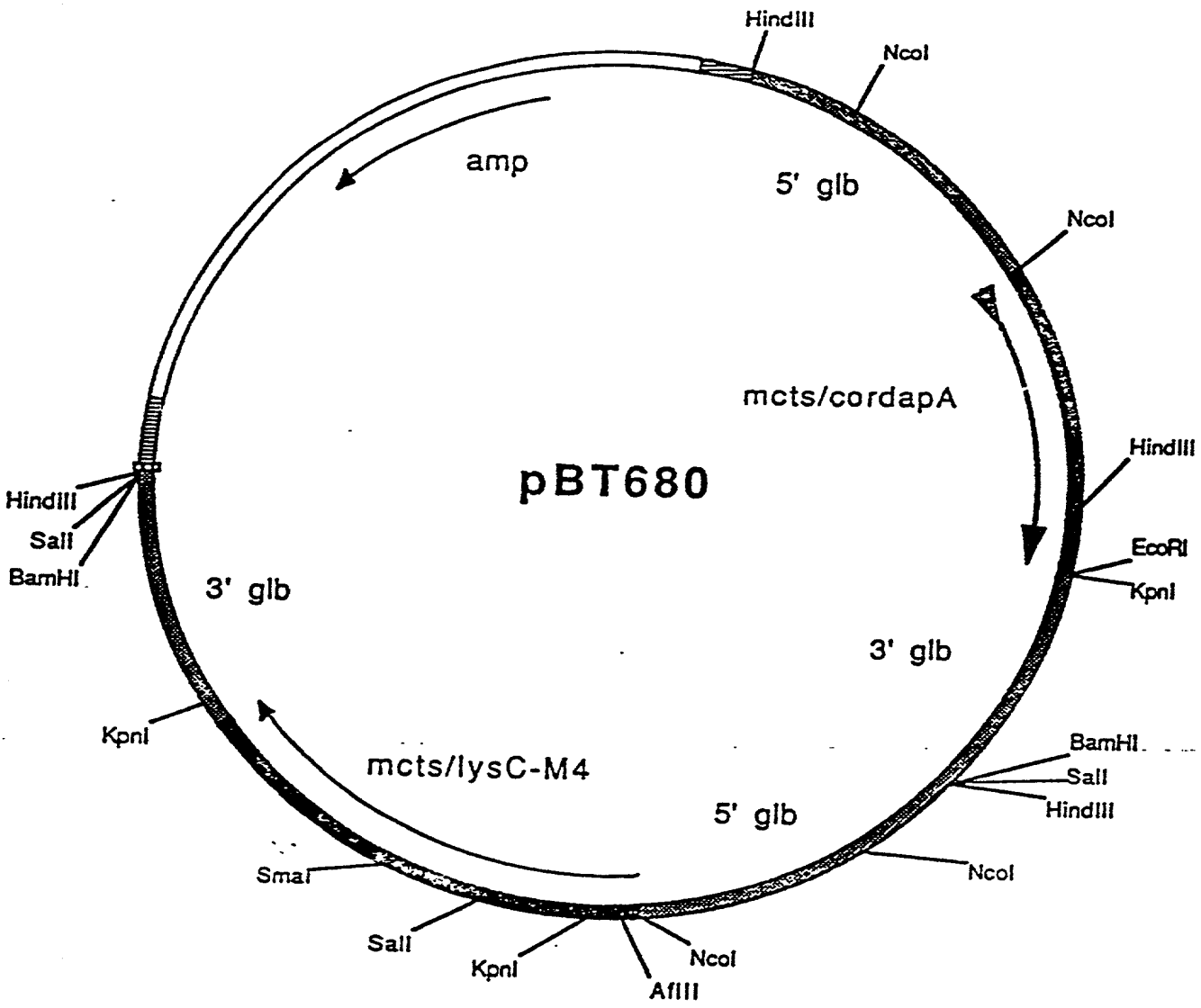

HindIII
NcoI
amp
5' glb
NcoI
mcts/cordapA
HindIII
pBT680
EcoRI
KpnI
HindIII
SalI
BamHI
3' glb
3' glb
KpnI
BamHI
SalI
mcts/lysC-M4
HindIII
5' glb
NcoI
SmaI
SalI
KpnI
NcoI
AflII

FIG. 17

FIG. 16

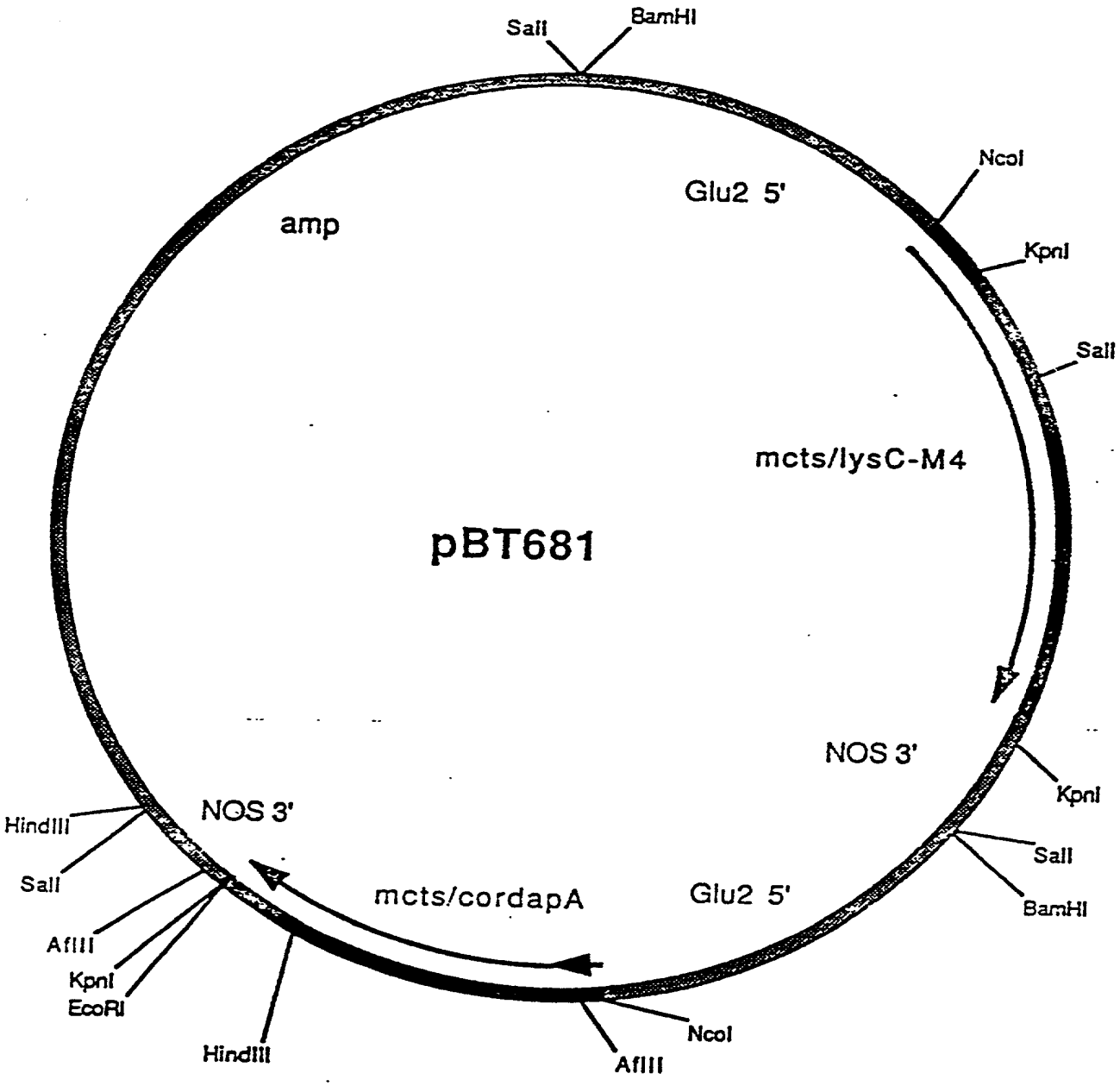

SalI
BamHI
NcoI
Glu2 5'
amp
KpnI
SalI
mcts/lysC-M4
pBT681
NOS 3'
KpnI
SalI
BamHI
Glu2 5'
NcoI
AflII
HindIII
NOS 3'
mcts/cordapA
HindIII
SalI
AflII
KpnI
EcoRI

FIG. 18

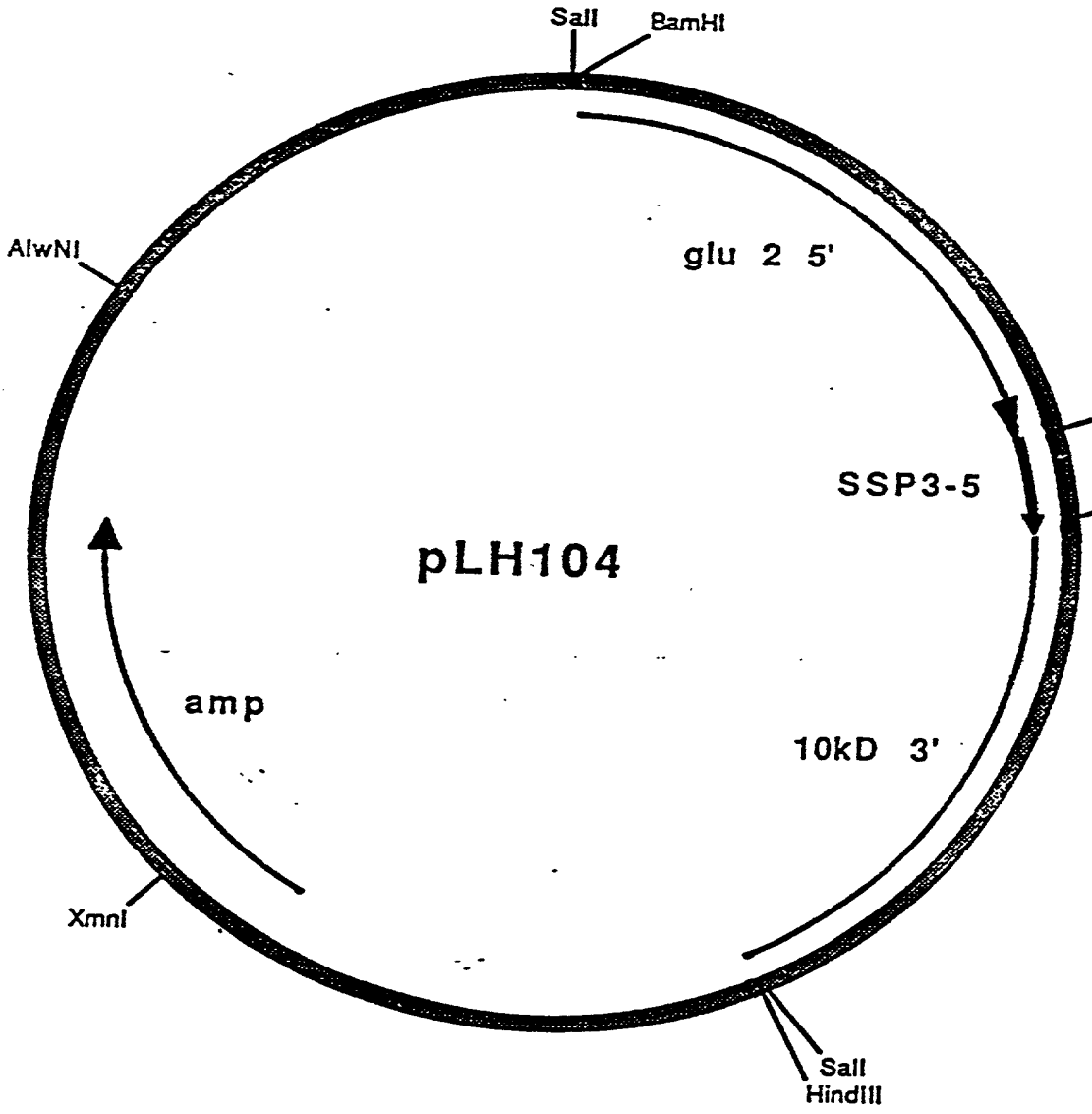
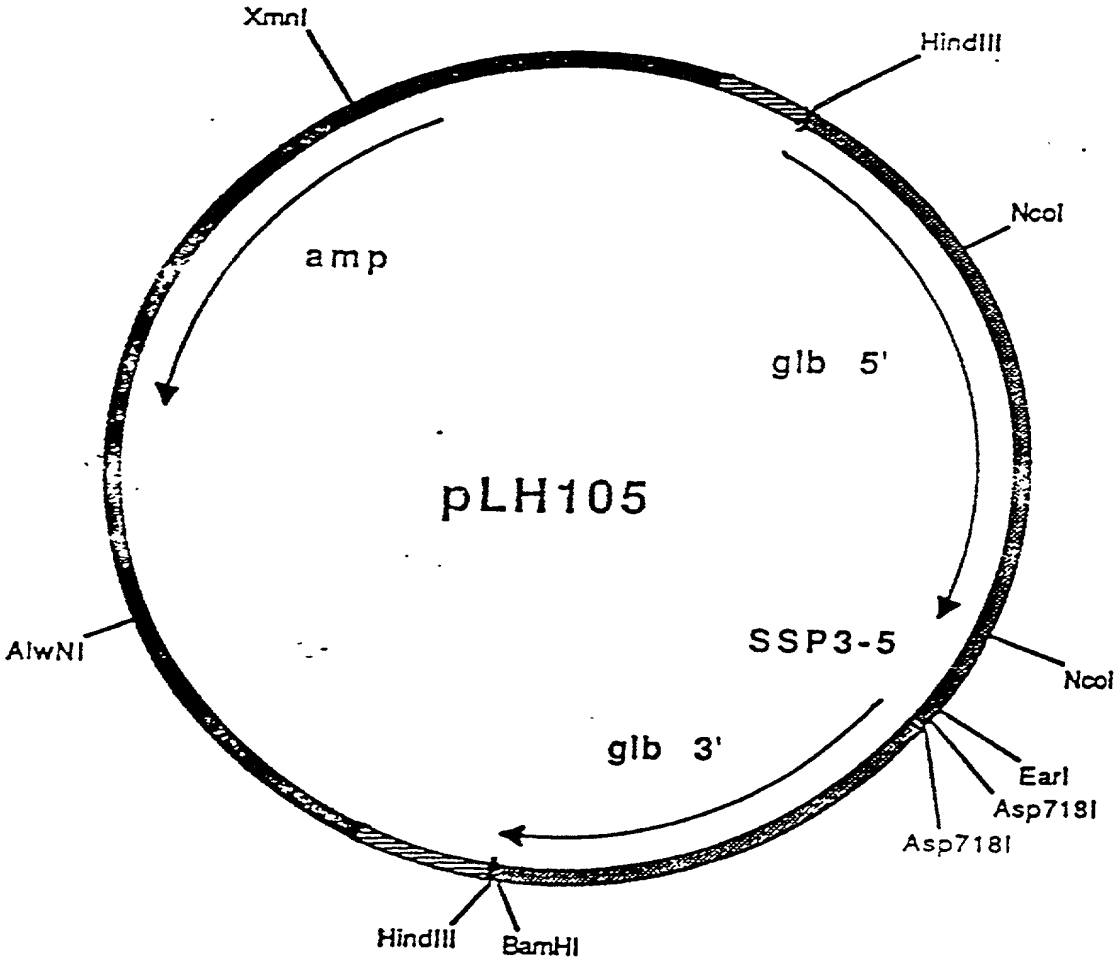


FIG. 18

FIG. 19

20



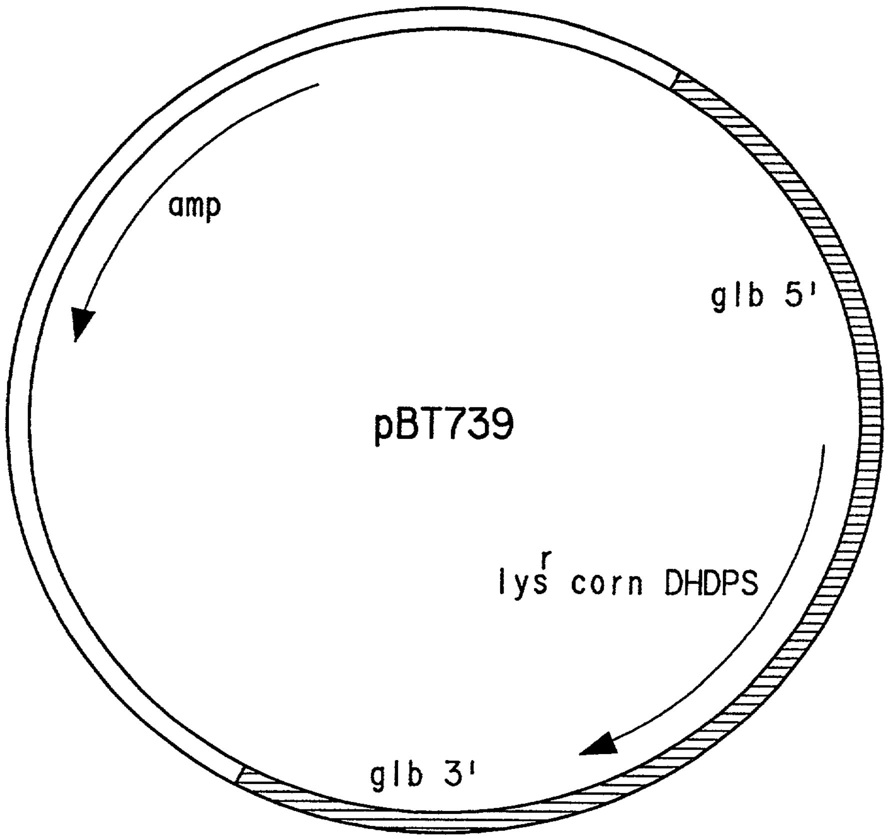


FIG.21

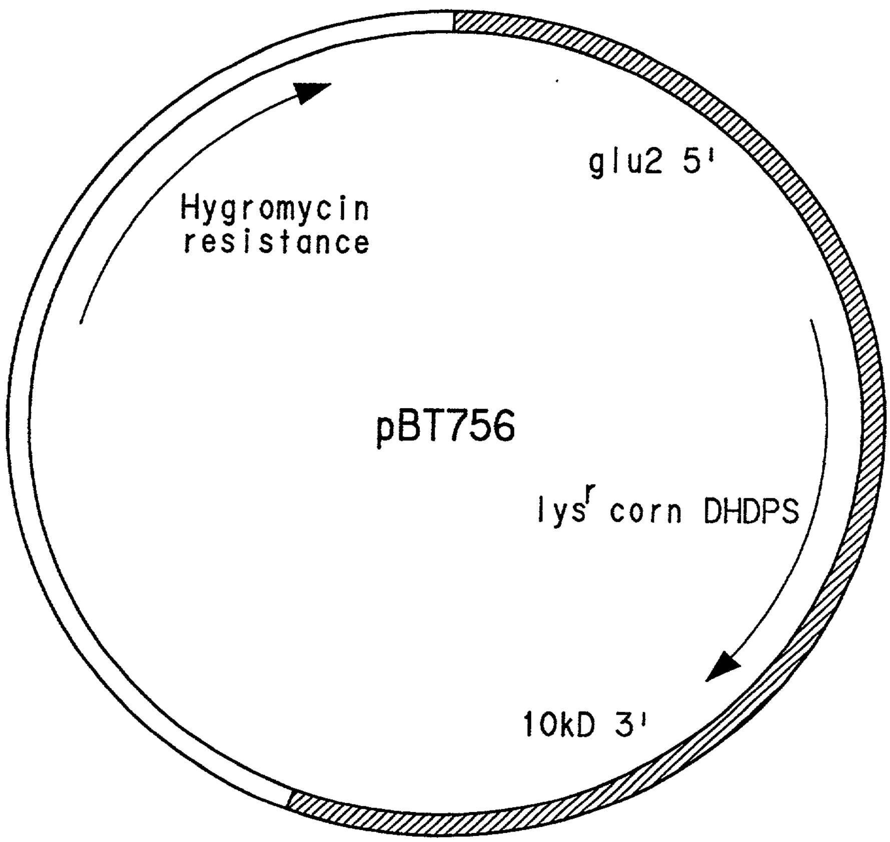


FIG.22